

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A transreflector comprising a transparent substrate having opposite sides, optical deformities on or in at least one of said sides, a plurality of reflective surfaces on or in said substrate each having a reflective layer or covering for reflecting exterior light incident on the exterior of one of said sides and striking said reflective surfaces ~~striking one of said sides~~, and a plurality of light transmissive surfaces on or in said substrate for transmitting exterior light incident on the exterior of the other of said sides and striking said light transmissive surfaces ~~striking one of said sides~~.

Claim 2 (currently amended): The transreflector of claim 1 wherein said substrate is a film or plate.

Claim 3 (original): The transreflector of claim 1 wherein said substrate is a multilayer film.

Claim 4 (original): The transreflector of claim 3 wherein said multilayer film is comprised of a carrier film and an ultra-violet curable layer.

Claim 5 (canceled)

Claim 6 (original): The transreflector of claim 1 wherein said reflective surfaces and said transmissive surfaces vary in at least one of the following: size, shape, angle, and orientation.

Claim 7 (currently amended): ~~The transreflector of claim 1 wherein said~~ A transreflector comprising a transparent substrate having opposite sides, optical deformities on or in at least one of said sides, a plurality of reflective surfaces on or in said substrate each having a reflective layer or covering for reflecting light striking one of said sides, and a plurality of light transmissive surfaces on or in said substrate for transmitting light striking one of said sides, said optical deformities ~~have~~ having at least two surfaces, one of said surfaces being said reflective surfaces each having said reflector layer or covering, and the other of said surfaces being said light transmissive surfaces.

Claim 8 (original - withdrawn): The transreflector of claim 1 wherein at least some of said optical deformities overlap each other.

Claim 9 (original - withdrawn): The transreflector of claim 8 wherein at least some of said optical deformities are staggered with respect to each other.

Claim 10 (currently amended - withdrawn): The transreflector of claim 8 wherein at least some of said optical deformities intersect or interlock each other.

Claims 11 and 12 (canceled)

Claim 13 (currently amended): A transreflector comprising a transparent substrate having opposite sides, a plurality of ~~sloping~~ reflective surfaces on or in said substrate each having a reflective layer or covering for reflecting exterior light incident on the exterior of one of said sides and striking said reflective surfaces ~~striking one side of said substrate~~, and a plurality of ~~other sloping~~ light transmissive surfaces on or in said substrate for transmitting exterior light incident on the exterior of the other of said sides and striking said light transmissive surfaces ~~striking the other side of said substrate~~.

Claim 14 (currently amended): The transreflector of claim 13 wherein said reflective surfaces are shaped, oriented or angled to reflect a greater portion of the exterior light striking incident on the exterior of said one side of said substrate.

Claim 15 (currently amended): The transreflector of claim 13 wherein said light transmissive surfaces are shaped, oriented or angled to transmit a greater portion of the exterior light striking incident on the other side of said substrate.

Claim 16 (currently amended): The transreflector of claim 13 wherein said reflective surfaces are shaped, oriented or angled to reflect a greater portion of the exterior light striking incident on the exterior of said one side of said substrate and said light transmissive surfaces are shaped, oriented or angled to transmit a greater portion of the exterior light striking incident on the exterior of the other side of said substrate.

Claims 17 -19 (canceled)

Claim 20 (original): The transreflector of claim 13 wherein said reflective surfaces have a substantially larger projected surface area, when projected onto a plane parallel to said substrate, than the projected surface area of said light transmissive surfaces when projected onto a plane parallel to said substrate.

Claim 21 (currently amended): The transreflector of claim 13 wherein said light transmissive surfaces have a substantially larger projected surface area, when projected onto a plane normal to the angle of maximum intensity of the exterior light striking incident on the exterior of the other side of said substrate $[[\theta_1, \theta_2]]$ than the projected surface area of said reflective surfaces when projected onto a plane normal to the angle of maximum intensity of the exterior light ~~striking~~ incident on the exterior of the other side of said substrate.

Claim 22 (currently amended): The transreflector of claim 13 wherein said light transmissive surfaces have a substantially larger projected surface area, when projected onto a plane normal to the angle of maximum intensity of the exterior light striking incident on the exterior of the other side of said substrate $[[\theta_1, \theta_2]]$ than the projected surface area of said reflective surfaces when projected onto a plane normal to the angle of maximum intensity of the exterior light ~~striking~~ incident on the exterior of the other side of said substrate, the exterior light ~~striking~~ incident on the exterior of the other side of said substrate coming from a backlight.

Claim 23 (original): The transreflector of claim 13 wherein said reflective surfaces are substantially planar.

Claim 24 (original - withdrawn): The transreflector of claim 13 wherein said reflective surfaces are curved.

Claim 25 (currently amended): The transreflector of claim 13 wherein said light transmissive surfaces are textured or lensed to redirect the exterior light passing through striking said light transmissive surfaces.

Claim 26 (previously amended): The transreflector of claim 13 wherein said light transmissive surfaces have optical shapes on or in said light transmissive surfaces.

Claim 27 (original): The transreflector of claim 13 wherein said light transmissive surfaces have an antireflection coating.

Claim 28 (original): The transreflector of claim 13 wherein said reflective surfaces and said light transmissive surfaces are formed by a plurality of grooves in said substrate.

Claim 29 (previously amended): The transreflector of claim 13 wherein said reflective surfaces and said light transmissive surfaces are formed by a pattern of individual optical deformities on or in said substrate each having a length and width substantially smaller than the length and width of the substrate and having a well defined shape.

Claim 30 (original): The transreflector of claim 13 wherein said reflective surfaces and said light transmissive surfaces are on or in said other side of said substrate and said one side of said substrate is shaped to redirect light.

Claim 31 (original): The transreflector of claim 30 wherein said one side of said substrate has at least one of a texture, and optical deformities shaped to redirect the light transmitted by said transreflector.

Claim 32 (currently amended): The transreflector of claim 31 wherein said one side of said substrate has said optical deformities which comprise at least one of the following: prismatic grooves, lenticular grooves, cross grooves, and individual optical elements or deformities of well defined shape.

Claims 33 – 40 (canceled)

Claim 41 (currently amended - withdrawn): The transreflector of claim ~~36~~ 13 wherein said reflective surfaces and said light transmissive surfaces are on or in said one side of said substrate and a pattern of individual optical deformities of well defined shape are on or in said other side of said substrate, at least some of said optical deformities vary in at least one of the following characteristics: position, size, height, density, angle, orientation, and shape.

Claims 42 - 80 (canceled)

Claim 81 (currently amended): A transreflector and backlight system comprising a backlight including a light emitting panel member having a panel surface that emits a light ray output distribution, and a transreflector comprised of one or more layers, said transreflector having one side in close proximity to the panel surface of the backlight, a plurality of light transmissive surfaces on or in said transreflector that transmit greater than 50% of the light ray output distribution from the panel surface incident on the exterior of the one side, and a plurality of reflective surfaces on or in said transreflector each having a reflective layer or covering that reflects more than 50% of ambient light incident on the exterior of the other side.

Claim 82 (original): The system of claim 81 further comprising a display in close proximity to the other side of the transreflector for receiving ambient light reflected by the transreflector and light from the backlight transmitted by the transreflector.

Claim 83 (original): The system of claim 82 wherein the display is a liquid crystal display.

Claim 84 (currently amended): A transreflector and backlight system comprising a backlight including a light emitting panel member having at least one input edge for receiving light from a light source and at least one panel surface for emitting light, and a transreflector for transmitting light emitted by said panel surface incident on the exterior of one side of said transreflector and for reflecting ambient light incident on the exterior of the opposite side of said transreflector, at least one of said sides of said transreflector

having optical deformities, a plurality of reflective surfaces on or in said transreflector each having a reflective layer or covering for reflecting ambient light incident on the exterior of ~~striking~~ said opposite side of said transreflector, and a plurality of light transmissive surfaces on or in said transreflector for transmitting light emitted by said panel surface incident on the exterior of ~~striking~~ said one side of said transreflector.

Claim 85 (currently amended): The system of claim 84 wherein said deformities have at least two surfaces, one of said surfaces being said reflective surfaces each having said reflective layer or covering and the other of said surfaces being said light transmissive surfaces.

Claims 86 – 89 (canceled)

Claim 90 (currently amended): A transreflector and backlight system comprising a backlight including a light emitting panel member having at least one input edge for receiving light from a light source and at least one panel surface for emitting light, and a transreflector for transmitting light emitted by said panel surface incident on the exterior of one side of said transreflector and for reflecting ambient light incident on the exterior of the opposite side of said transreflector, one or the other of said sides of said transreflector having a plurality of ~~angled~~ reflective surfaces each having a reflective layer or covering for reflecting the ambient light incident on the exterior of said opposite side of said transreflector and a plurality of ~~other angled~~ light transmissive surfaces for

transmitting the light emitted by said panel surface incident on the exterior of said one side of said transreflector.

Claim 91 (currently amended): The system of claim 90 wherein said reflective surfaces are shaped, oriented or angled to reflect more than 50% of the light incident on the exterior of ~~striking~~ said one side of said transreflector.

Claim 92 (currently amended): The system of claim 90 wherein said light transmissive surfaces are shaped, oriented or angled to transmit more than 50% of the light incident on the exterior of ~~striking~~ the other side of said transreflector.

Claim 93 (currently amended): The system of claim 90 wherein said reflective surfaces are shaped, oriented or angled to reflect more than 50% of the light ~~striking~~ incident on the exterior of said one side of said transreflector and said light transmissive surfaces are shaped, oriented or angled to transmit more than 50% of the light incident on the exterior of ~~striking~~ the other side of said transreflector.

Claim 94 (original): The system of claim 90 wherein said panel member has a pattern of individual optical deformities for producing a particular light output distribution from said panel surface that is tuned to the side of the transreflector that receives incident light emitted by said panel surface such that said transreflector transmits a greater portion of the light emitted by said panel surface.

Claim 95 (original - withdrawn): The system of claim 90 wherein said reflective surfaces and said light transmissive surfaces are formed in or on said opposite side of said transreflector, and said one side of said transreflector has optical deformities that transmit the incident light emitted from said panel surface and direct the light to said light transmissive surfaces in or on said opposite side of said transreflector.

Claim 96 (original - withdrawn): The system of claim 95 wherein said optical deformities comprise at least one of the following: prismatic grooves, lenticular grooves, cross grooves and individual optical deformities of well defined shape.

Claims 97 – 99 (canceled)

Claim 100 (original): The system of claim 90 wherein said reflective surfaces and said light transmissive surfaces are in or on said one side of said transreflector, and said opposite side of said transreflector has optical deformities for redirecting the light exiting from said opposite side more toward the normal relative to said opposite side of said transreflector.

Claim 101 (original): The system of claim 100 wherein said optical deformities comprise a pattern of prismatic surfaces.

Claim 102 (original): The system of claim 100 wherein said optical deformities comprise a pattern of individual optical deformities each having a well defined shape.

Claim 103 (original): The system of claim 90 wherein said reflective surfaces and said light transmissive surfaces are in or on said one side of said transreflector, and said opposite side of said transreflector has at least one of a texture, chemical etch, laser etch, and optical deformities shaped to redirect the light transmitted by said transreflector.

Claim 104 (previously presented): The system of claim 103 wherein said opposite side of said transreflector has said optical deformities which comprise at least one of the following: prismatic grooves, lenticular grooves, cross grooves and individual optical deformities of well defined shape.

Claim 105 (currently amended): The system of claim 90 wherein said panel member has a pattern of individual optical deformities for producing a particular light output distribution from said panel surface, at ~~lest~~ least some of said deformities of said panel member having a length and width that is substantially smaller than the length and width of said panel member and a well defined shape including at least one sloping surface for reflecting or refracting light impinging thereon out of said panel surface.

Claim 106 (original): The system of claim 105 wherein said sloping surface of at least some of said deformities of said panel member is oriented to face an optically coupled area of said input edge across said panel member.

Claim 107 (previously presented): The system of claim 105 wherein the area of said sloping surface of at least some of said deformities of said panel member varies across said panel member to attain a desired light output distribution from said panel surface.

Claim 108 (canceled)

Claim 109 (previously presented): The system of claim 105 wherein said sloping surface of at least some of said deformities of said panel member is a planar surface, further comprising at least one light source optically coupled to said input edge, said planar surface of the respective deformities of said panel member being oriented across said panel member to face an area of said input edge to which the light source is optically coupled.

Claims 110 – 118 (canceled)

Claim 119 (original): The system of claim 105 further comprising a display having one side in close proximity to a side of said transreflector facing away from said panel member.

Claim 120 (currently amended): The system of claim 119 wherein said display is signage, a liquid crystal display, or a membrane switch.

Claims 121 and 122 (canceled)

Claim 123 (currently amended): The system of claim 424 120 wherein said display is a liquid crystal display and said pattern of said optical deformities of said panel member is varied such that the spacing of said optical deformities of said panel member does not cause interference with any pixel spacing of the liquid crystal display.

Claims 124 – 145 (canceled)

Claim 146 (currently amended): The transreflector of claim 4 7 wherein said reflective layer or covering for each of said reflective surfaces is a reflective coating.

Claim 147 (currently amended): The transreflector of claim 4 7 wherein said reflective layer or covering for each of said reflective surfaces is made of metal.

Claims 148 – 151 (canceled)

Claim 152 (new): The transreflector of claim 7 wherein said optical deformities each have a length and width substantially smaller than the length and width of said substrate and having a well defined shape.

Claim 153 (new): The transreflector of claim 7 wherein said optical deformities run the full length or width of said substrate.

Claim 154 (new): The transreflector of claim 153 wherein said optical deformities comprise a pattern of prismatic or lenticular surfaces.

Claim 155 (new): The transreflector of claim 1 wherein said reflective surfaces are on or in the other side of said substrate opposite the side that receives the exterior light that is reflected by the reflective surfaces.

Claim 156 (new – withdrawn): The transreflector of claim 1 wherein said reflective surfaces are on or in the same side of said substrate that receives the exterior light that is reflected by the reflective surfaces.

Claim 157 (new): A transreflector comprising a transparent film or substrate of one or more layers, a plurality of light transmissive surfaces on or in said film or substrate that transmit greater than 50% of exterior light incident on the exterior of one side of said film or substrate, and a plurality of reflective surfaces on or in said film or substrate each having a reflective layer or covering that reflects more than 50% of a different exterior light incident on the exterior of the other side of said film or substrate that has a different light ray angle distribution than the light ray angle distribution of the exterior light incident on the exterior of the one side.